October 11, 1950.

Dear Max:

Thank you very much for sending the copy of "Effects of Atomic Weapons". I have found it very entertaining reading. (For example, P. 11.52.)

I have read it through to about the critical paragraphs 11.96... One can't help seeing a tug-of-war between two groups: those who emphasize and who minimize the effects of radiation. By and large, the latter seem to have won out. The approach seems to be rather definitely biased by insistence upon the nominal 20kT bomb as the basis of discussion, and a surprising lack of imagination as to how the mass radioactive products of fission might be disseminated over a large area. For example, it is repeatedly emphasized that maximum blast effect is obtained by an aerial explosion, while sea-water provides the widest dissemination of radioactivity, but a limited blast. But it should take little imagination to see how a bomb might be salted to provide both effects.(Or am I all wet! --rhetorical question.)

H-226 was sent out to you a couple of days ago. Along with it was W-1329, which I'll explain presently.

I have started on organizaing and copying the pedigrees, but it's a terrific job. I think I'll have a set of skeleton pedigrees mimeographed: that may simplify it somewhat. Probably, I won't be able to complete it for a while: I have to polish up the ms. for the Columbus paper, and clear up a publishing problem on campus.

After some further consideration, I think that I would like to begin negotiations toward applying for an AEC grant, on a very small scale for calendar 1950. It looks as if the X-ray equipment can be dug up locally, but I may need a small allotment foran assistant, depending on whether she stays in student status. You mentioned some forms that you could distribute. Could we have these, as well as any general information that might be useful? I understand that I have been cleared for Secret for otherwwork; I suppose that won't speed up AEC clearance: I can fire the forms whenever you're ready.

The revised 11.96-11.107 looks perfectly good- especially in contrast to the section it replaced! 11.107 reads a little smug, but possibly the AEC is sponsoring more and better work than I had imagined (I would insert "we hope" after each "will supply" or its equivalent.) Another point which might need amplification in more specific terms is that the stated threshold of .3 r/wk is not a level which should be complacently accepted. The possibility of gonad-shields ought not to be ighored.

As to W-1329: it was picked up as a Mal- mutant of W-466 (a haploid segregant of H-1). At first I thought it was showing a peculiar type of segregation, but cytological and further genetic study showed that it was a simple haploid, carrying a very unstable gene. From the appearance of the colonies, I would estimate the mutation rate from + to - at more than 10^{-2}. The - types are also mutable, going to + about 10^{-3} or 10^{-4}. Stable + have not been seen, nor have stable -. This appears to be a very unusual example of genic instability, shifting between two alleles. I sent it along thinking you might be interested to look at it on Mal EMB, and if it looked good to you to dissect a pedigree to make an absolute measurement of the mutation rate. Esther has been working on "mutabile" types, but these are not really especially unstable since the mutants are selected. W-1329 is rather like the unstable typhimurium of your doctoral thesis, but possibly more mutable. The culture sent you will, of course, be a mixture of Maly and Mal-.

Any chance of your visiting Madison this Fall, perhaps to negotiate the contract?

Sincerely,

Joshua Lederberg